

ABSTRACT

A drain-extended MOS transistor in a semiconductor wafer (300) of a first conductivity type comprises a first well (315) of the first conductivity type, operable as the extension of the transistor drain (305) of the first conductivity type, and covered by a first insulator (312) having a first thickness, and further a second well (302) of the opposite conductivity type, intended to contain the transistor source (304) of the first conductivity type, and covered by a second insulator (311) thinner than said first insulator (312). First and second wells form a junction (330) that terminates (320, 321) at the second insulator. The first well has a region (360) in the proximity of the junction termination, which has a higher doping concentration than the remainder of the first well and extends not deeper than the first insulator thickness. Region (360) of higher doping concentration reduces the transistor drain resistance so that the drain current is increased to approximately twice the value it had without the higher doping concentration, while the transistor breakdown voltage remains determined by the (low) doping concentration of the remainder of first well (315).